Comments on CFS first draft REPORT WITH EMPHASIZED ON AGRICULTURAL EXTENSION IN EGYPT

Most of Egypt's people live along the banks of the Nile River, and more than two-fifths of the population lives in urban areas. Along the Nile, the population density is one of the highest in the world, in excess of 5,000 persons per square mile (2,000 per square km) in a number of riverine governorates

By 2050, the world urban population is expected to nearly double, considering that an estimated 1,7 billion people of the world 2,2 billion people experiencing moderate or severe food insecurity already live in urban and peri-urban areas, this rapid urban growth represents a significant food security and nutrition global challenge.

Egypt urban population for 2023 was 48,580,854, a 1.87% increase from 2022. Egypt urban population for 2022 was 47,689,118, a 1.83% increase from 2021. Egypt urban population for 2021 was 46,831,955, a 1.86% increase from 2020. Egypt urban population for 2020 was 45,976,808, a 1.87% increase from 2019

There was a steep decrease in mobility from 5.4 percent for rural-urban migration in 2012 (4.7 percent for urban-rural migration) to 3.9 percent in 2018 (3.1 percent for urban-rural migration)

Egypt rural population for 2023 was 64,135,744, a 1.32% increase from 2022. Egypt rural population for 2022 was 63,300,985, a 1.39% increase from 2021. Egypt rural population for 2021 was 62,430,223, a 1.53% increase from 2020. Egypt rural population for 2020 was 61,488,326, a 1.65% increase from 2019

National Population Council (NPC), said the country's population is expected to reach between 142 and 157 million by the year 2050

Ensuring food security and nutrition across the rural-urban continuum requires policies that adhere to human rights obligations and principles such as participation, accountability, non-discrimination, transparency, human dignity. empowerment and the rule of low.This entails fostering policies that address inequalities and are people-centered, protect the planet and are age and gender-responsive and that contribute to the realization of all human rights, particulary the right adequate food.

Rural- urban continuum, the merging of town and country, a term used in recognition of the fact that in general there is rarely, either physically or socially, a sharp division, a clearly marked boundary between the two, with one part of the population wholly urban, the other wholly rural

City region food systems in Egypt:

CRFS Approach in Egypt are connected to many rural and urban sectors (e.g. food security, economic development, water and waste management, energy, transport, health, climate change, governance and spatial planning, etc.). By taking this into account, economic, social, and environmental sustainability linkages can be acknowledged this particularly through implemented Presidential Initiative Decent Life.

city region food systems are connected to many other rural and urban sectors (e.g. food security, economic development, water and waste management, energy, transport, health, climate change, governance and spatial planning, etc.). By considering this, economic, social, and environmental sustainability linkages can be acknowledged. In order to support policy transformation and the implementation of a resilient and sustainable CRFS, it is crucial that governments and other actors such as donors, non- governmental organization, and civil association assess their food dependencies, identify weaknesses and potential pressure points, and where possible, develop targeted strategies to improve their food systems. Each city region is unique with its own specific characteristics, challenges and solutions.

Prioritize agricultural advisory and extension services that preserve, sustainably manage and use natural resources, enhance soil health and conserve and sustainably use biodiversity this could entail, among others, promoting climate resilient farming techniques, agroecological and other innovative approaches, biotechnology and bio economy strategies as well as regenerative and nutrition sensitive practices,

In this regard, it is necessary to activate the activities of the Agricultural and Veterinary Extension Service, encouraging and supporting small-scale producers to expand their animal production projects, providing immunization services, vaccination, artificial insemination, and credit facilities for small and medium-sized livestock development projects.

In this case extensions'and Bank financial staff , viewed in detail the financing and credit programs offered by the bank; In implementation of the initiative of the Central Bank of Egypt, such as procedures for obtaining an agricultural loan and the interest rate, supporting the activities of the national veal (beef) project and providing improved strains, dairy collection centers, Irrigation development projects and the transformation from tradition flooded irrigation to the improved irrigation method, developing the transportation system and agricultural mechanization by financing tractors and tricycles. financial advisory also prefers to the bank new restructure and how to deal with defaulting clients and solve problems related to old loans.

The extension needs assessment of large animal's producers have been identified in the light of the lack of knowledge and inadequacy in the application of farmers to practices related to the feeding bases of fattening animals, where most of the feedings used depend mainly on rough stuffing filling feed. With regard to poultry for the production of table eggs at the level of home consumption, needs were identified in the recommendations of veterinary care and intensive care, which include heating, ventilation, nutrition, lighting and various immunizations on time. With regard to the needs of sheep and goat care, the needs assessment have been identified ; where the farmers needs knowledge for the specifications of good animal when buying to form a herd , and the importance of observation of the herd and care of its members and the importance of isolating the patient animal, The process of mating and how to help ewes and goats during the delivery and breast feeding of lambs and goats and weaning and the processing of the necessary rations, as well as milk processing and marketing dairy products. The results of the analysis of agricultural soil in randomly areas showed the lack of organic matter, and therefore the need for the importance of animal production as a source of old, decomposed organic fertilizer, manure output, And the waste to be added continuously to make up the shortage of organic matter, especially in areas with hot weather conditions

The role of the researcher in the agricultural extension and rural research institute and the other research institutes is Studying the current situation in each agricultural region in terms of cultivated crops and their production problems, especially with regard to seeds, practices and various agricultural processes of fertilization, irrigation, Pest Control, harvesting and post-harvest transactions in addition to the cost of cultivation according to the farmers economic situation.

The most important agricultural crops cultivated in Egypt and the cost of cultivation according to farmer's respondents stated:

1- Sugar Cane:

The results of related studies in this regard showed that the crop of sugar cane is the main crop of the majority of farmers in upper Egypt, where it occupies the first place among other agricultural crops by 90.1%, followed by wheat and alfalfa in second place by 34.5%. This requires the awareness of farmers with other crops to be grown in this region.

The important results of different studies in both regions uber- Egypt and Delta showed that approximately 88. % of the random sample of respondent's farmers did not follow an agricultural rotation during the cultivation of their field crops. This shows the low degree of application of the agricultural rotation; and this result may reflect the negative effects of the law on the free application of the agricultural rotation. Therefore, it should be noted that commitment, even if optional, and the agreement of holders of the same basin in studied areas, is vital for the implementation of agricultural policy, achieve the needs of the community and the implementation of the export policy of the country.

To avoid the agricultural soil stress was one of the main reasons for the followers of the agricultural rotation according to the opinion of the respondents who implement the agricultural rotation by approximately 40.00 % of the total number of frequencies. This result points to the need for further agriculture extension efforts to promote the importance of an agricultural rotation and to encourage these farmers to participate in persuading their farming neighbors to reach fully implement of the agricultural rotation.

In Uber- Egypt results showed that the most important reasons for not following the agricultural rotation: sugar cane cultivation by 32% followed by the reasons that the agricultural rotation does not apply obligatory by 20% , while the reason for the lack of interest in the employees of the agricultural co- operatives ranked third with 16% , because of the lack number of extension agent It is therefore appropriate to note that the managers of agricultural cooperatives and other agriculture departments are required to participate in persuading farmers to fully implement the agricultural rotation, especially since it does not require the editing of minutes for those who are not committed to participating in the implementation of the agricultural rotation.

Regarding the cost of sugarcane cultivation according to farmer's respondents, it is clear that the farmers lost according to their claim; this led some of them to not supply the crop to the sugar companies and sell it to the extract. It is therefore appropriate to note that the extension agent are required to tell and persuade theses farmers that (Intercropping) In the case of cultivate leguminous crops under sugar cane, it is possible to ensure an increase in the yield from the sale of the bean

crop, in addition to reduce the cost of fertilization, especially nitrogen fertilization (average yield per feddan of 2700 LE and 1000 LE of bean straw).

2- Wheat:

Some of the respondent's farmers reported that they are cultivating wheat and barley under the sugar cane in this regard extension agent tell farmers that is a bad practice for agricultural soil and lead to a lack of production, as reported by the respondents farmers that, their average productivity is 14 ardab per feddan, while the average productivity of the Republic for wheat crop is 18 ardab per feddan. In this case, extension agent and subject matter specialist members in wheat national campaign convince farmers to adopt and implemented the recommended good practice recommendations.

٣– Maize:

Results of different related studies in both regions uber- Egypt and Delta showed the limited area planted with sorghum and maize, to overcome the opisticals of spread the maize cultivated areas the respondents farmers asked to increase the supply price of Ardab, especially with the increase in the prices of inputs with the low productivity of feedan as mentioned by some of them,even the average maize crop productivity of the Republic which amounted 18 Ardab per feddan and Egypt considered as one of countries qualified to be among the highest producing countries of sorghum per unit area.

In this regard the Ministry of Agriculture clarified that the areas planted with corn this year are about 3 million feddan of maize in summer and about 400 thousand feddan of sorghum and that the guaranteed price that was set to purchase the crop from farmers is 9 thousand pounds for white maize and 9 thousand and 500 pounds for yellow maize. This is the minimum supply limit, as the farmer is charged the price of maize on the day of supply if it is higher than the guaranteed price and in the farmers' interest.

The extension needs of the farmers could be identified, especially with regard to the cultivation and production of maize crop as follow:

- Dissemination of hybrid species recommended to farmers.
- Cultivate on line and keep only one plant in each hole,
- Compliance with fertilization amounts and recommended addition dates,
- Adjust irrigation water, and avoidance of thirst or drowning and avoid irrigation at noon, and during the wind,
- And refrain from cutting leaves of corn,
- Weed control and,
- Diagnosis of infection and ways to control diseases and insects.

The crop structure of different crops in the uber-Egypt and Delta regions:

Field crops: Sugar cane, Sugar beet, wheat, barley, beans, clover, lentils, Fenugreek, maize, sorghum, sesame, peanuts
Horticultural Crops:
Vegetable Crops: Tomato - cucumber - onion - garlic - cabbage.

Fruit crops:

Date palms, Daum palm trees, pomegranate, citrus, mango, Guava, Olive,

Other: henna. Hibiscus

The majority of villages in Uber- Egypt are mainly based on the cultivation of Sugar Cane - Wheat - Alfalfa – Clover - Beans, whereas vegetable and fruit crops occupy limited areas.

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farmers attitudes towards irrigation improvement:

Soil surface leveling by using laser or heavy wood panel (Kasbia) as a practice to rationalize the use of irrigation water ranked first, followed by the importance of the practice of non-flooded irrigation or scarcity irrigation While the practice of non-irrigation in the case of soil saturation ranked third.

This reflects the Lack of knowledge or unwillingness of some farmers in all practices to rationalize the use of irrigation water Some farmers reported that they are observing the flow of water on their fields, and the others reported that they are divide the land into slices or doing terraces and dividing the land into basins, cultivate on line, while the minority said not to abide by these practices Some of them reported that before applying the irrigation process, they manually pressed a piece of soil to detect soil moisture and determine the need for irrigation

The majority of farmers reported that they are using traditional irrigation methods. It is therefore necessary to provide them with knowledge that increases their awareness of the importance of rationalizing the use of irrigation water and the adoption of field irrigation recommendations.

It is therefore clear that for agriculture to be sustainable, productivity must be enough with quantity and quality required to meet the increasing needs of consumers, It should continue with a high degree of efficiency in order to enable the farmers to obtain an acceptable return on their investments and their work. To achieve this, it is necessary to maximize the return of the unit of production (land-water) by improving agricultural practices. Irrigation is an important process in the life of the plant, through which the plant obtains its water needs for growth at different stages. To ensure that the plants in the field receive water in equal quantities without thirst or drowning, the farmer must settle the soil surface leveling by using the regular technic or Laser equipment as a best method of leveling the soil to ensure access of water to all parts of the field and to increase the productivity of feedan up to 30%. The usefulness of laser-leveling technology may not be achieved unless it is disseminated among the masses of farmers and their use, and they are satisfied

with the consequences of this use. The diffusin of laser-leveling between the targets is achieved only by using the most appropriate channels of communication to disseminate this innovation and to address the contents of educational extension messages. This leads to positive changes in knowledge, attitudes and behavior in order to achieve acceptance of this innovator and work to avoid the reasons for rejection.

Therefore, agricultural extension and irrigation advisory workers are used the appropriate methods to achieve its educational extension messages many of the extension and communication methods which have been implemented and evaluated, the practical methods of demonstration are the most effective way of achieving desired changes in the behavior of the target; especially with regard to the adoption of laser-leveling technology; it is therefore advisable to plan and implement this most appropriate method of persuasion to adopt this practice and implement it in the fields of all target farmers.

Results that were based on the farmer responses: One of the most irrigation problems is the problem of falling water levels, occupies the first rank, while the growth rate of weeds ranked second the lack of irrigation network maintenance takes third place.

The problem of low water levels, with no leveling adjust prevent water from reaching the endings in the quantity required when it is needed, the spread of weeds on the bottom of the canal and on both sides of it lead to the obstruction of water flow and increase the rate of loss in irrigation water, the spread of weeds on both sides of canals, and in the fields leads to the spread of diseases because these weeds are the host of many insects and therefore the source of infection of insect pests; it is therefore necessary to provide farmers with knowledge that increases their awareness of the importance of weeds prevention and methods of weeds control, in this regards the presidential initiative, "Decent Life," includes lining canals with cement.

It was also found that failure to follow up the maintenance of the irrigation and drainage networks led to the inefficiency of its work, which is reflected in the productivity of crops planted and the deterioration of soil condition; therefore, it is necessary to direct farmers attention to the importance of maintaining the irrigation and drainage networks so that they can work efficiently within the fields. The work on improving field irrigation systems and the implementation of laser soil surface leveling was one of the most prominent solutions to irrigation problems from the point of view of the respondent's farmers as reported by them, Provision of irrigation water according to the actual need for agriculture, followed by the modernization and development of irrigation facilities and systems, which ranked third.

As for the farmers attitudes towards the implementation of improved irrigation systems, their responds ranked in descending order as follows:

- They are used to growing sugar cane,
- The lack of factories to supply sugar beet,
- Commitment to supply sugar cane crop to the plant,
- Sugar beet cultivation needs large areas and,
- Fear of change and they did not know how to grow sugar beet.

It is therefore necessary to plan and implement awareness campaign and extension programs for the most important crops that can be cultivated in their areas and reduce the consumption of irrigation water and technical recommendations for each crop such as sugar beet. In addition, farmers reported that they leveling their land after planting each crop.

From the above it becomes clear that it is important to inform farmers specially in uber-Egypt about the benefits of soil leveling before cultivating each crop to ensure their productivity increase and the availability of irrigation water.

The reasons for leveling soil after planting each crop were limited to the respondents' view as follows:

- Providing irrigation water and easy irrigation,
- ease of conducting soil service operations and,
- Increased production.

It was also possible to determine the reasons for not leveling soil before cultivating each crop, according to the non-implementers of this recommendation as follows:

- The high costs of leveling soil, and the lack of land for leveling and,
- The lack of leveling equipment availability in village, and the cultivation of sugar can last 5 years in field.

Identifying the knowledge, practices and problems related to best control, harvesting and post-harvest operations:

The prevalence of weeds and pests has been observed, this leading to a decrease of at least 20% in crop yields. This is due to incorrect practices that may be recommended by some traders of pesticides without diagnosis or wrong diagnosis or lack of suitable compound , and the use of types of alternative compounds ineffective and in times and quantities not recommended, and more than that some mixing process and processing without knowledge of the basis of mixing and processing, In addition to the lack of commitment to follow the methods and procedures of integrated control and biological and chemical control of weeds and pests.

With regard to (harvesting, Picking) and recommendation for maintaining post-harvest quality:

The lack of knowledge has been shown to follow the wrong practices, especially with regard to maturity indices, quality indices, handling, chilling, storage and supply especially for horticultural crops, which leads to increased losses. The results showed different methods and outlets for marketing crops grown by respondents, The sugar cane crop is Supply to the factory, while the wheat crop is sometimes delivered to the silos or mills and sometimes sold to the merchants, and the other part is reserved for domestic consumption , while corn, beans and fruit crops are sold to traders, vegetable and fruit crops are sold by themselves in local markets without proper handling, trading, supply and storage methods, Even in the case of using dehydration methods to maintain the product and prolong the period of market life ; Dehydration is carried out on sand and soil, this leading to contamination of the product and loss of its marketing value , it is also stored in inappropriate places exposed to pollution and weather fluctuations and attacked by

insects and rodents, in addition to not using appropriate packaging. Finally, the alfalfa clover is grown for livestock feed despite the availability of export opportunities

Background on the implementation of extension activities related to agricultural innovation and entrepreneurship in rural Governorates:

Agricultural innovation and entrepreneurship activities aim to increase the income of small farmers in rural Governorates by utilizing a value-added chain approach.

This approach activates the role of value chain stakeholders from the production stage to the marketing stage. This is achieved by providing technical and extension support to small farmers and those working in marketing activities, whether individuals or cooperative agricultural entities, producing and marketing, manufacturing primary agricultural raw materials, disseminating innovative agricultural ideas, applications, and improved practices, and encouraging their adoption to achieve sustainable development in the selected Governorates.

Effective implementation of these activities achieved growth in the local market by increasing the supply of agricultural products of the quality and quantity required to meet local market demand and facilitate export opportunities, in accordance with market requirements in terms of food safety and quality.

These activities also opens the way for innovators, those with innovative ideas, and those capable of managing their projects within governorates to apply their knowledge and establish their own businesses, which enabled them to generate higher financial returns than they would have achieved if they worked in traditional businesses.

This will also provide numerous job opportunities in all fields, helping to improve the financial conditions of many individuals and families and advance all-important sectors, especially the agricultural sector.

These activities also, contributed in maximizing the efforts of the Egyptian state in developing villages in Upper Egypt and, Delta, governorates, with the aim of strengthening the capacities of rural people and forming associations and entities with common goals in the selected areas to achieve and effect educational, economic and social guidance development, create new sources of income for rural families, and establish micro-agricultural and home-based manufacturing projects for targeted men, women and their families. This is in line with the objectives of Egypt's Vision 2030 for sustainable development and some of the global sustainable development goals that the Egyptian state seeks to achieve.

Egypt is considering as one of the most important countries in the world producing and exporting medicinal and aromatic plants, with the cultivated area exceeding 70,000 Feddans annually.

These crops are characterizing by a diversity of more than 30 crops, and the volume of exports of these crops amounts to approximately 95% of oils and pastes and approximately 85% of dry herbs annually.

Despite these enormous numbers, it clearly means that we are not benefiting from the benefit of manufacturing these products, and thus we are missing their high and profitable returns.

This is especially true given the tremendous potential available in Egypt, which enables it to occupy a leading position among the most important countries producing and exporting these types of plants, providing that major investors, as one of the parties in the value chain, turn to processing these plants and benefiting from their high added value.

This encourages an increase in the annual cultivated area of these plants, in line with Egypt's ambitious program to expand the cultivation of non-traditional export crops, including medicinal plants with a comparative advantage.

Fayoum is considered one of the leading governorates in the Republic in the production and cultivation of medicinal and aromatic plants. Not only that, but it is also the leading governorate in the country in the cultivation of medicinal and aromatic plants. Chamomile, wormwood, chamomile, marjoram, and peppermint are cultivated there.

For this reason, Fayoum Governorate chosen by extension agent, and international donors and grants to implement the Agricultural Innovation activities.

These educational extension activities aims to produce a high-quality product acceptable for local and export marketing, in accordance with international standards and in accordance with the World Health Organization's Guide to Good Practices for the Cultivation and Collection of Medicinal Plants.

Therefore, in this regard, the training , advisory activities and, technical support providing to the specific targeted groups aimed at developing their knowledge and adoption of improved practices, ideas, applications and innovations that aim to produce leaves, stems, flowers, in florescence’s, seeds, fruits, rhizomes or roots containing the active ingredient with certain standard specifications, which is expressed by quality, which simply means all the factors that contribute directly or indirectly to the safety, effectiveness and acceptability of the medicinal plant or drug.

Thus, the added value of the product is achieving through the adoption by the parties of the chain, each according to its position, of the following practices:

• Preserving the product's organoleptic or morphological characteristics, which are characteristics that perceiving by the senses, such as shape, color, appearance, taste, odor, etc.

• Preserving the plant's content of active ingredients, their components, and their proportions (chemical characteristics).

• Maintaining the purity of the plant material and its freedom from undesired or foreign matters, such as dust, impurities, other plant parts, insects, their parts, or waste, etc.

• Preserving the physical properties, including moisture content, total ash percentage, acid-insoluble ash, and water-soluble ash.

• The plant material must be free from causes of microbial contamination or microbial load, such as Salmonella, and other microbes must be within the permissible limits according to international standard specifications and pharmacopoeias.

• Using the most appropriate drying methods, means, and systems. To avoid exposure to fungal infections during the drying process from harmful substances such as aflatoxin.

• The plant material, extracts, or final product must be free of residual traces of various chemicals (fertilizers, fungicides, insecticides, herbicides), heavy elements such as lead, cadmium, or any other contaminants, or at least present within the permissible limits (maximum residue limits) in accordance with international agreements and conditions and in accordance with the conditions set forth by the importing party.

The agricultural sector in Sohag Governorate is diverse and varied. It considering as an agricultural governorate, with rural residents representing 70% of the population. Agricultural land covers an area of 347,000 acres, making agriculture a source of income for the majority of rural households. This highlights the need for technological development and advancement through the implementation of educational extension activities and the provision of technical support aimed at increasing agricultural production, particularly in crops with a comparative advantage in Sohag Governorate, such as garlic and onions. This also highlights the need to improve the performance of various activities within the value chain, including technical knowledge, necessary procedures and inputs, and the technology required for each activity within the value chain. This places many tasks on those involved in generating and transferring agricultural knowledge. They are concerned with increasing the productivity per Feddan of agricultural crops to meet growing demand, using the most appropriate educational extension methods.

Onions rank third after potatoes and tomatoes in terms of cultivated area in Egypt, with an area of approximately 200,000 acres, producing approximately 3 million tons annually. Onions are considering as one of the most important export crops, with exports exceeding 450,000 tons. Given the economic importance of this crop, there is a clear need to improve agricultural practices to achieve the highest quantitative and qualitative yields, starting with planting dates and methods, seed rates, fertilizer applications, irrigation, pre-harvest and post-harvest practices, and to produce seedlings, bulbs, bulbs, and onion seeds. This is also necessary to produce seeds and supply farmers with seeds of the Giza 6 onion variety, which is improving for cultivation in Upper Egypt governorates, especially during the winter season. The bulbs of this variety are golden yellow in color and flattened in shape. It is characterizing by good storage for seven months and is suitable for export and drying. It also ripens early, from two to three weeks, and is suitable for producing onions from bulbs and green onions. Wheat is a strategic crop, with total consumption in Egypt, both domestic and imported, reaching approximately 18 million tons, comprising approximately 8 million tons of domestic production and 10 million tons of imported wheat.

Given the global circumstances that have led to a shortage in global supplies due to the Russian-Ukrainian war, wheat considering as one of the most important crops whose cultivation must be expanded to fill the gap and reduce imports in hard currency, so as not to burden the state budget.

In this regard, efforts already taking to expand horizontally in the cultivated area and vertically have led to a decrease in the volume of wheat harvested in 2022, supported by increased domestic production. Egypt has also achieved between the fifth and seventh places in terms of productivity, surpassed only by wheat-producing countries with long winters.

In coherence with the state's efforts, extension activities provide technical support to specific target groups, in Fayoum and Sohag governorates, particularly given that the area planted with wheat in Sohag amounted to 210,000 Feddan, out of the total agricultural area in the governorate, which amounted to 347 Feddan. This means that wheat occupies 70% of the governorate's agricultural land.

The wheat planting area in all the centers and villages of Fayoum Governorate reached 200,510 Feddan out of the total area of the governorate, which amounted to 396,398 Feddan, this represented 51% of the agricultural land area in Fayoum, including 33,902 acres in Fayoum Center, 22,850 acres in Sinuris Center, and in Tamia Center, the planted area reached 34,708 acres, and in Atsa Center, 41,000 acres, while the area planted with wheat in Abshway Center reached 11,696 acres, and in Youssef El-Siddiq Center, 27,195 acres.

It was also taken into consideration to provide good varieties of seeds to achieve the highest productivity of the wheat crop, and the most important of these varieties are Giza 171, Sakha 95, Misr 1, 2 and 3, Seds 12 and 14, Giza 11 and 12, Shendweel 1, Beni Suef 5 and 6, and Sohag 4 and 5. These varieties are among the best varieties that are grown, they are already available in all the headquarters of the agricultural associations in all villages and centers, and they are sold to farmers at subsidized prices in the governorates of Sohag and Fayoum.

Like other rural areas, the Egyptian rural sector is characterized by home-based manufacturing projects (cottage enterprises), which are defined as small-scale, decentralized manufacturing businesses that typically operate in rural homes alongside agriculture.

Cottage enterprises considered as an important source of income in rural areas and are charactering by the following:

They employ members of the rural family, they are a source of income complementary to income from agriculture, they are highly vulnerable to economic and environmental shocks, they require low investment, marketing available in local markets, and they employ a small number of workers, ranging from one to two. Small and micro enterprises in Egypt, particularly in Fayoum and Sohag governorates, face some challenges, such as the need for financing and marketing, a lack of technical, training, and technological support, a shortage of trained workers, and a lack of connectivity with other projects. These challenges apply to small home-based manufacturing projects based on medicinal and aromatic plants, onions, and garlic. Therefore, implementing specific and tailoring extension activities in a way that maximizes the added value of these crops and creates new job opportunities and small and micro-manufacturing projects may have an impact on the national economy, especially the rural sector and rural families in an integrated manner.

Parallel economy in Egypt:

Considered all economic activities that are not generally subject to tax include all economic activities that provide a good source of income, which not protected.

These include all domestic work, temporary employment, and the liberal professions. The persistence of informal activities is largely due to the lack of suitable formal jobs in areas and regions that have the capacity to absorb the surplus labor.

The first appearance of the parallel economy in Egypt occurred during the capitalist time this before the 1952 revolution, when foreigners and the wealthy worked in the formal sector, while the majority of society worked in informal activities such as agriculture and handicrafts as wage laborers. However, in the current capitalist era, which began with the economic openness policy in 1975, the state began enacting laws preventing small investors from entering the economic sphere. Some studies indicated an increase in the spread of the informal economy in Egypt during the 1980s, reaching 22.5% of the size of economic units in 1986, which provided approximately 2.5 million job opportunities at the time. This percentage increased in the 1990s to reach 40% of the size of economic activity in Egypt due to the increase in the size of informal economic units. The volume of activities of these units estimated at approximately $76 billion in 1998, and their contribution to employment increased to provide approximately 5 million job opportunities.

The parallel economy in Egypt represents unregistered real estate and production assets, as well as unregulated commodity and service economic activities.

According to this estimate, the parallel economy estimated at EGP 2.6 trillion.

The size of informal economic in Egypt estimated at approximately 2 million, representing 53% of the total economic establishments.

Undoubtedly, the size of the parallel economy has increased significantly in Egypt after the January 25 Revolution. This was due to the lack of state oversight of economic activity, the state's preoccupation with political events, and the return of many Egyptians working abroad. This led to an increase in the size of informal activities and an expansion of the labor market.

A 2016 report by the African Development Bank estimated that the percentage of workers in the informal sector in Egypt was approximately 61% of the total number of workers. A study dating back to late 2018, prepared by the Tax Committee of the Federation of Egyptian Industries, estimated the size of the informal economy, or what is known as the shadow economy, at approximately 4 trillion Egyptian pounds, equivalent to approximately 60% of the annual economic transactions, estimated at approximately 400 billion dollars.

In coherence with the state's efforts, extension activities provide technical support to specific target groups, to achieve, integrating the informal economy (parallel, shadow, hidden, or unofficial) into the formal economy (considering it as an alternative opportunity),and, raising tax awareness among all segments of society. Law No. 152 of 2020 on the Development of Small, Medium, and Micro Enterprises. This law aims to regulate the work of small, medium, and micro

enterprises, as well as to integrate informal economy projects into the formal economy. The law granted informal economy projects a grace period to regularize their status and granted them temporary licenses until they do so. This grace period was extended twice, ending in April 2024.

Despite the law, which issued more than four years ago, only about 10,000 informal enterprises out of approximately 2 million informal enterprises have applied to regularize their status. Only 7,000 financiers have actually joined the accounting system under the SME system.